

Standard Mass Flow Controller

MODEL 3660 SERIES

Model 3660 Series Mass Flow Controller has been developed centering the focus on compactness and low cost and is being acclaimed by a wide range of users for diverse applications, including from laboratory research and development activities to the use as a standard mass flow control model for various types of analyzers and vacuum devices in the production line. Varieties of derived models and options are available.

Features

- Equipped with an advanced flow sensor of constant-current temperature difference detection type to ensure high-speed response
- Use of a normally closed valve to ensure safety
- High reliability ensured using a solenoid actuator
- Low differential pressure type control available for combustible gases (LP option)

Standard Specifications

Model	3660	3665
Flow range (N ₂ equivalent, 20°C/1 atm)	10 SCCM–20 SLM (freely selectable)	30 SLM–100 SLM (freely selectable)
Sensor	Thermal mass flow sensor	
Valve type	Proportional solenoid valve (closed when not energized)	
Control range	2–100% (F.S.)	5–100% (F.S.)
Response	2 sec. or less (0–100% within ±2% typical)	3 sec. or less (0–100% within ±2% typical)
Accuracy	±1.0% F.S. (25°C)	±1.5% F.S. (25°C)
Temperature coefficient	±0.1 F.S./°C (15–35°C)	±0.2 F.S./°C (15–35°C)
Repeatability	±0.5% F.S.	
Operating differential pressure	F.S. ≤ 5 SLM: 50–300 kPa (G)	F.S. ≤ 50 SLM: 150–300 kPa (G)
	F.S. > 100 SLM: 50–300 kPa (G)	F.S. > 50 SLM: 200–300 kPa (G)
	Option: Medium differential pressure (MP) and low differential pressure (LP) specifications are available.	
Allowable operating pressure	500 kPa (G) or less	
Proof pressure	980 kPa (G)	
Leak rate	1 × 10 ⁻⁸ Pa·m ³ /s or less (excluding permeation of He)	
Allowable ambient temperature	5–45°C	
Allowable ambient humidity	10–90% (No condensation allowed)	
Materials of parts in contact with gases	Body: SUS316	
	Valve seat: FKM (option: CR or NBR)	
	Sealing: FKM (option: CR or NBR)	
Electric connection	Dsub 9-pin connector as per KFC Standard (Compliant with SEMI Standard)	
Flow rate input signals	0–5 VDC (Input impedance: 1 MΩ or more)	
Flow rate output signals	0–5 VDC (External load resistance: 250 kΩ or more)	
Required power supply	+15 VDC (±5%) 100 mA, –15 VDC (±5%) 250 mA	
Joint (Main unit bore)	Standard: 1/4SWL Option: 1/8SWL 1/4VCR RC1/4, etc.	Standard: 3/8SWL Option: 1/2SWL 3/8VCR RC3/8, etc.
Weight	Approx. 1000 g	Approx. 1500 g

Note
Specifications relating to the flow range (e.g., flow range, accuracy and response) are expressed in N₂ or air equivalent. The product will be built with the primary pressure of 300 kPa or less and the secondary side open to the atmosphere. For details on the pressure requirements, please contact us.

Harness Layout

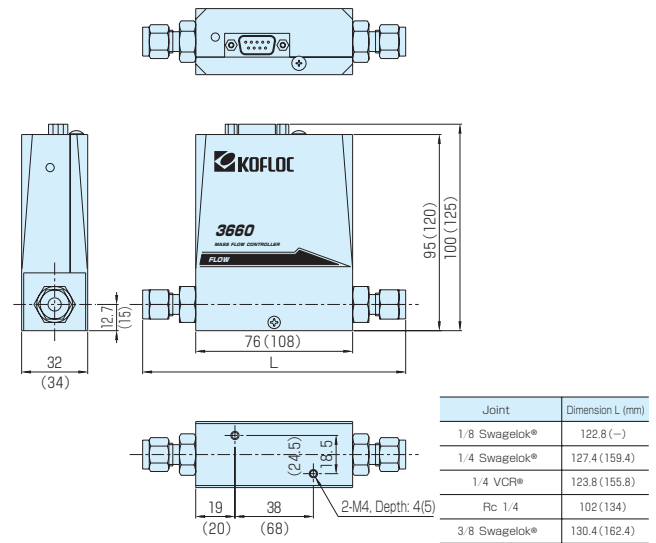
Pin Assignment of Dsub 9-pin Connector per KFC Standard

Pin No.	Signal	Pin No.	Signal
1	Input valve open/close operation	6	Flow input Hi
2	Flow output 0–5 V	7	Flow output COM
3	+15 VDC Power source	8	Flow input Lo
4	Power source COM	9	Output valve voltage
5	–15 VDC Power source		

* Because a differential input system is used for the product, pin 4 (Power source COM) and pin 7 (Flow output COM) are connected inside the mass flow controller while pin 8 (Flow input Lo) is isolated. In case of a single-ended connection, connect pin 8 to pin 4.

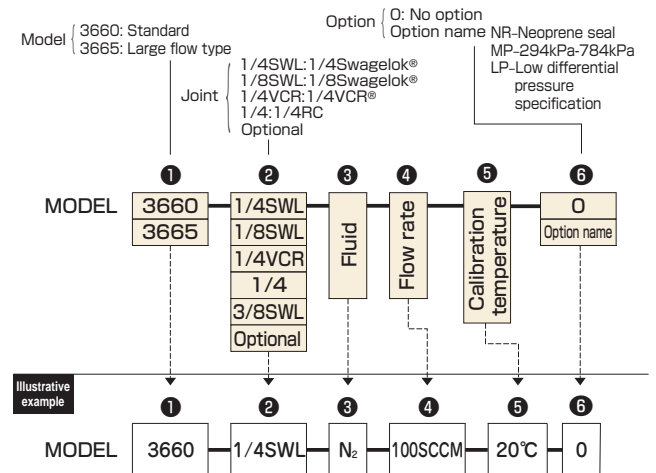


Dimensions



* Values indicated in () denote the dimensions for Model 3665.

Ordering



* Refer to "Ordering" and "Illustrative example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.